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Thickening compositions and thickened aqueous sold solutions.

○ The investion elabas is a thistered baseous composition incorporating in white or dismits, coming at some one-figure that influences on course have invested assignment or extensional force or benefit daily of the control of t

cumene sulphonate, xylene aulphonate, toluene sulphonate or mixtures thereof, in their acid or salt form; and a weak acid having a pix value > 2.0, and water when acidonate one or more cleaning desinitacting and/or odeurizing acents may be distrolved or

N dispersed

The invention also relates to premix compositions composed of above-mentioned amines and sulphonetes.

Incom which the thickned aqueous compositions can be prepared by dilusion with water or an aqueous solution or streampton and to a process for cleaning non-historate surface.

Xertix Copy Centre

Thickening compositions and thickened aqueous acid solutions

Field of the Invention

- The invention relates to thickned aqueous compositions incorporating low levels of arrives or amine derivatives and low molecular weight aromatic supporates and displaying pronounced shear thinning behaviour, i.e., entitioning high viscositios at low raise of stees.
- This type of behaviour is of particular advantage to cleaning compositions intended to be applied to nonhorizontal structural surfaces such as walls and windows and santary fittings such as sinks, baths, showers, wash busins and lareatories.
- 15 The Invention is especially concerned with aqueous acid-containing cleaning compositions which are commonly applied to the surfaces of sanitary fittings.

Background of the Invention

- It is well income that the higher the viscosity of a fould composition, the guester will be its residence on the entire of the control of an enhancement and and as all its recording an the increased in many ways. Repeately for compositions containing a hypothorist belone, a variety of commissions have been ways. Repeated to compositions containing a hypothorist belone, a variety of commissions have been appeared to the control of the con
- one hydrocurbon chain of at least four curbon atoms.

 A compriser (c) can more particularly be used an easier of an inorganic acid, a listly sold or an ester of a larry acid, a carbonytic acid enter in which the hydrocurbon chain delived from the alcohol has at least our carbon statem, an alkyl clinifick, a hydrony compound or installated hydrony compound and the hydrony compound as prelimently water insolvable, such as a fatty stochel, containing from 4-30 curbon atoms in at least one sold richin.
- 30 A cationic detergent only an amine oxide of a special structure is mentioned, which is exemptified by a large number of representatives, the actual application of quaternary ammonaum sats being neither disclosed in general terms, nor in specifically exemptified representative directions.
- US Palest Specification 2 907 453 discisses a stakes, cod water dispersible baths catheling composition complising from about 80 to 367% by weight of a conforci quaternay seminary senters, are set as allowed to the conforci supplements, the weight ratifs of the cathelin software to the anisons delergent being from about 451 to 511, and wheren the salinic substances is saliced from because or regishables explanate or a polysisyl substituted aromatic supplements with one of the alloy groups having not more than 15 C-atoms and such of the remaining skyll groups have not more than 2 calcino stame.
- Considering the attenents in US Patent Specification 3 987 450, Inset 42-46 and Inset 57-46 of column, it is eight that a planess filled in the ant wad color) by leed along to long hips (as excellational caption-rang) compounds and an atolicit sulphosate as thickness composition. A person skilled in the art was even tortified in the prefaction on account of furtheritor et al. I, Marchare, Konge, Person. Alt. Vestchhasteam. 7 to 1979 (publ. 1978), 3, 150-8, Nats. Komm. SSSR Powerchn AM. Vestchhasteam Morrow, USSR.
- 8 British Patent Application No. 2 010 982 discloses an aqueous liquid detergent composition especially adopted for dishwashing, comprising 5-90% by weight of an organic synthetic surfactant system of at least two surfactants and 5-90% by weight of close juice, said organic synthetic contractant system consisting of 1 from 30-90 parts by weight of this surfactant system of a calcium sensitive anionic surfactant especial from the quivous consisting of relative shall produce consisting of relative shall produce processing of water-recibility Co.P., skylly betaless upliphorates, salance supplications.
- So having 8-20 catton etoms, olefin sulphreases having 8-20 carbon atoms, of Co₁₂ sklyl sulphraculators, of C₈₋₂₂ sklylphend sulphraculators, or considerable sharing 1-25 schoolygough and michares thereot;
 - 2) from about 7-10 parts by weight of e less calbium sensitive second surfactant selected from the group consisting of water-actube notionic condensation products obtained by condensing from 5-30 moles of an silkylate cardia, preferably othlylane or propylate colds, with one mole of a hydrophobic compound.

having 8-24 carbon atoms and at least one mactive hydrogen atom, e.g., an amino group. According to page 3, lines 2-4, as additional optional ingredients can be added; hydrotropes and solubilizing agents such as a sodium or potassium tolkame sulphonate and sodium or potassium vylene sulphonate, which are generally added to promote phase stability, especially of compositions with high concentrations of surfactants.

Nowwer, comissing these store-mattened statements in GB-Az-2 (10 802, it is clear that a person site of an art when looking for indicening compositions, would only be all away from trying to prince thickening compositions based on the use of solubilizing viscosity decreasing cumens, toluene or xylene suphonates, having moreover in mind the prejudice as mentioned hereinsfelder on page 2.

A miller pricture may be devined by a person telled in the art from European Peach Application No. 0. 172, SSA discissing compositions for learning teath states, when yet a content of all non-price adduced of obligation costs for all pricture costs to allocated crimed hydroxysarine with a liveax skept chann of 10 to 20 canton across. Soft across substitution of 10 to 20 canton across soft across substitution and subjections subjections or limits a livear supposes with 80-50 canton start is the skept invitation and optionally offer assue components of anti-conspositions, wherein the least to disk in 10 to 10

According to page 5, citric acid, tartaric acid, benzene hexacerboxylic acid, phosphoric acid, lactic acid, and the like, may be added to these compositions.

and the like, may be added to these compositions.

Moreover, Europeán Patent Application, No. 0, 172, 534 on page 5 states that known hydrotrophe 25 compounds, e.g., lower alkyl asythulphonate such as tolkone, xylene or cumeno sulphonate, may be added as such or in the sat form.

As result of extensive research and experimentation if has surprisingly been found now that improved thickened aqueous phase cleaning compositions could be obtained, which comprise

at 0.1-00% by wright of a week add, having a 67-wike > 2.0.

It is the 1.1 at 10% by wright of a sente, more particularly selected from primary, secondary or
It is the 1.0 at 10% by wright of a sente, more particularly selected from primary, secondary or
statistical or unstatistical feet or fractional skilly droug having at least 10 ection atoms and preheaby; is a
continuous or or m n/s. skilly of endorgenous constituting to 1.2 at carbon atoms, and wherein the
optical order entropic leifed groups are formed by optically substituted skilly/course, skylicitus or
optical order entropic leifed groups are formed by optically substituted skilly/course, skylicitus or
optical order entropic leifed groups are formed for a feet or less of a fell-deroptic ring, consisting
at least the reliespes attoms, one of which leining substituted by amont (lower) field or in yellow (lower) skylicit
and particularly optically also a proportionally and a sent or provided leif or leifer or primary or particular city and particular city and one of branch particular city and particular city and optical city or optical city of the c

c) from 0,01% to 5% by weight of an organic, anionic sulphonate selected from the group consisting of cumene sulphonate, xylone sulphonate, and toluene sulphonate, in their acid or salt form, and mixtures thereof; an

d) water at 190% by weight, wherein optionally one or more additional cleaning, disinfecting and/or oddrizing agents may be dissolved in minor amounts, the percentages by weight being calculated on the weight of the total autowork composition.

A preferred embodiment of the abre-defined compositions is formed by thickened equipous cleaning compositions having a pit him 0.5-4, containing 1.10% by weight of the ambien end consisting 1.10% by weight of the ambient of a section and the ambient and, succivir add, edipt and, seek and phesiphoric acid, suplamaric acid, guidanic acid, and lactic acid used. Most preferred are the compositions formir and or critical cold.

Examples of additional cleaning, disinfecting and/or odorizing agents are detergent builder salts, perfumes, antibiotics or swellary detergents, which may normally be used in an amount of up to 5% by weight.

Specific classes of the amines as specified under (b) can be represented by the following formulae:

wherein R, represents a saturated or unsaturated linear or branched alkyli group having at least 10 carbon atoms and preferably 16-24 carbon atoms, or an anyl, aralloy or alkanyl group contaming up to 24 carbon stoms, wherein Rs and Rs may be the same or different and represent hydrogen, an alkyl group, and preferably a lower alkyl group containing 1-4 carbon atoms and more preferably a methyl group, or polys (alkoxy) group, preferably a poly(ethoxy) or poly(propoxy) group, wherein more preferably the number of ethoxy or propoxy radicals is at most 5, or

wherein H. is as defined before and R_e R₀ and R_e may be the same or different and represent hydrogen, alkyl, poly(ethoxy) or poly(propoxy) groups, and n is a number from 1 to 6 and more preferably 2-4, or

wherein R. Is a hydroxyalkyl or amino alkyl group containing 1-4 carbon atoms, preferably reacted with a saturated or unsaturated fatty acid with 8-20 carbon atoms and R_e is an alkyl or alkenyl group, linear or branched, with 8-20 carbon aloms.

A class of more specific examples of the amines as defined hereinbefore comprises:

oleyl amine, an stearyl amine.

hydrogenated tallow amine,

lauryl amine,

myristyl amine 36 cetyl amine, and

soja alkyl amine or mixtures thereof.

A preferred group of these compounds comprises olevi amine and tallow amine.

According to another embodiment of the present compositions, a typical class of amines as defined hereinbefore, comprises: bis(2-hydroxyethyl)cley(amine,

bis(2-hydroxyethyl ethoxy)oleyl amine, bis[2-hydroxyethyl tera/ethoxyl/oley] amine.

bis(2-hydroxyothyl)stearyl amine. bis(2-hydroxyethyl ethoxy)stearyl emine,

5 bis[2-hydroxyethyl tetre(ethoxy)]stearyl amine. bis(2-hydroxyethyl) tallow amine, bist2-byrimsyethyllbyringenated tallow amine.

bis(2-hydroxyethyl totra(ethoxy))tallow amine,

bis(2-hydroxyethy(llaury) amine. to bis(2-hydroxyothyl)myristyl amine.

bis/2-hydroxyethylisoia alkyl amine. bis(2-hydroxyethyl ethoxy)soja alkyl amine, bis[2-hydroxyethyl trijethoxy]]soja alkyl amine,

his/2-hydroxyethyl trijexthoxyt@auryl amine. ... bis(2-hydroxyethyl di(ethoxy)] auryl amine.

bis(2-hydroxyethyl ethoxy)lauryl amine, bis/2-hydroxyethyl ethoxylmyristyl amine. bis(2-hydroxyethylicetyl amine,

bis(2-hydroxyethyl ethoxy)cetyl amine, bis(2-hydroxyethyl tri(athoxy))cetyl amine, bis(2-hydroxyethyl tri(athoxy))lauryl amine, bis(2-hydroxyethyl briethoxyllaurylathyl amine,

bis[2-hydroxyethyl dl[ethoxy][tallow amine, bis[2-hydroxyethyl tri[ethoxy][tallow amine, bis[2-hydroxyethyl tri[ethoxy][cleyl amine,

bis(2-hydroxyothyl tn(ehloxy))stearyl amine, bis(2-hydroxypropyl)oleyl amine,

io bis(2-hydroxypropyl)stearyl amine, bis(2-hydroxypropyl)tallow amine, bis(2-hydroxypropyl)hydrogenated tallow amine, bis(2-hydroxypropyl)bianyl amine,

bia(2-hydroxypropy)/myristyl amine, is .bis(2-hydroxypropy)/celyl amine, bis(2-hydroxypropylacja alkyl amine,

bis(2-hydroxypropyl propoxy)cleyl amine bis(2-hydroxypropyl propoxy)seja alkyl amine, bis(2-hydroxypropyl propoxy)seja alkyl amine,

bia(2-hydroxypropyl propoxyltellow emine, bia(2-hydroxypropyl propoxylhydrogeneted tallow amine, bis(2-hydroxypropyl propoxyllauryl amine,

bis(2-hydroxypropyl propoxy)myristyl amine, bis(2-hydroxypropyl propoxy)cetyl amine, 35 bis(2-hydroxypropyl dipropoxyl)bis(y) amine.

bis(2-hydroxypropyl di(propoxy))steeryl amine, bis(2-hydroxypropyl di(propoxy))tallow amine,

bls[2-hydroxypropy] d(propoxy)]hydrogenaled tallow amine, bis[2-hydroxypropy] d(propoxy)]lauryl amine, xx bls[2-hydroxypropy] d(propoxy)]hyristyl amine,

bis(2-hydroxypropyl di(propoxy))soja alkyl amine, bis(2-hydroxypropyl di(propoxy))sotyl amine, bis(2-hydroxypropyl tri(propoxy))sieyl amine, bis(2-hydroxypropyl tri(propoxy))sieja sieyl amine,

bis[2-hydroxypropyl tri[propoxy]]steanyl amine,
 bis[2-hydroxypropyl tri[propoxy]]steanyl amine,
 bis[2-hydroxypropyl tri[propoxy]]hydrogenated tallow amine,

bis[2-hydroxypropyl trl(propoxy)]lauryl amine, bis[2-hydroxypropyl trl(propoxy)]myristyl amine,

a bis[2-hydroxpropy istralpropowy]sipoh; enine, bis[2-hydroxpropy) istralpropoxy][sips] arime, bis[2-hydroxpropy] istralpropoxy][sips alkyl arime, bis[2-hydroxpropy] istralpropoxy]siboh; arime, bis[2-hydroxpropy] istralpropoxy][siboh; arime,

bis[2-hydroxypropyl tetra[propoxyj]hydrogenated tallow amine, tis[2-hydroxypropyl tetra[propoxy]]aunyl amine, bis[2-hydroxypropyl tetra[propoxyl]myristyl amine, and

bis(2-hydroxypropy) tetra(propoxy) [myristy) amine, and bis(2-hydroxypropy) tetra(propoxy) [cety) amine or mixtures thereof. A preferred group of these compounds is comprising: bis(2-hydroxyethylitation amine.

so bis(2-hydroxyethyl)hydrogonated tallow amine, bis(2-hydroxyethyl)eqia aliqyl amine, bis(2-hydroxyethyl)eleyl amine, bis(2-hydroxyethyl)eleyl amine,

bis[2-hydroxypropylitallow amine, se bis[2-hydroxypropylithydrogenated tailow amine, bis[2-hydroxypropyliteoja alkyli amine,

bis(2-hydroxypropyl)soja alkyl amine bis(2-hydroxypropyl)cetyl amine, bis(2-hydroxypropyl)oleyl amine,

bis(2-hydroxygropyl ethoxy)tallow amine. bis(2-hydroxyethyl othoxy)hydrogenated tallow amine, bis(2-hydroxypropyl ethoxy)sois alkyl amine. bis(2-hydroxypropyl ethoxy)cetyl arrine, hist2-hydroxypropyl ethoxyloleyt amine. bis/2-hyroxyethyl propoxyltallow amine, bis(2-hydroxyethyl propoxy)hydrogenated tallow amine. bis(2-hydroxyethyl propoxy)sola alkyl amine. bis(2-hydroxyethyl propoxylcetyl amine, and

19 bis(2-hydroxyethyl propoxy)oleyl amine or modures thereof. Most preferably bisi2-hydroxyethyljoleyl amine,

bis(2-hydroxyethyl)cleyl amine. bis(2-hydroxyethyl)fallow amine, and

is bis(2-hydroxyethyl)tallow arrins are used.

According to another embodiment of the present compositions, a typical specific class of amines as defined hereinbefore, comprises: N.N-dimethyl oleyl artine. N,N-diethyl oleyl amine,

20 N,N-dibonzyl olayl amina, N.N-difenyl oleyl amine. N,N-dipropyl cleyl amine,

N.N-dimethyl stearyl amine. N.N-diethyl stearyl amine, 25 N,N-dipropyl stearyl amine.

N,N-dibenzyl stearyl amine, N,N-difenyl stearyl amino, N,N-dimethyl (hydrogenated) tallow amine,

N,N-diethyl (hydrogenated) tallow amine, 33 N,N-dipropyt (hydrogenated) tallow amine, N,N-drbenzyl (hydrogenated) tallow amino, N,N-cifenyl (hydrogenated) tallow amine.

N.N-dimethyl soja alkyl amine, N.N-diethyl sois slivy smine as N,N-dipropyt soja alkyl amine, N,N-dibenzyl soja alkyl amine, N,N-difenyl soja alkyl amine,

N.N-dimethyl lauryl amine. N,N-diethyl lauryl amine, 40 N.N-dipropyl leuryl amine. N.N-dibenzyl lauryl amine,

N.N-difecti leary amine. N.N-dimethyl myristyl amine, N.N-diethyl myristyl amine.

N,N-dipropyl myristyl amme, 45 N.N-dibenzyi myristyi amine. N.N-difenyl myristyl emine,

N,N-dimethyl cetyl arrine. N.N-diethyl cetyl amine. N.N-dipropyl cetyl amine.

so N,N-dibenzyl cetyl amine, and N.N-difenvi cetvi amine or mixtures thereof. A preferred group of the later class comprises:

N.N-dimethyl cley's amine. N.N-dimetryl fauryl aming. ss N.N-dimethyl cetyl amine, N.N-dimethyl myristyl amine.

N.N-dimethyl sola alkyl amine. N,N-dimethyl tallow amine, and N,N-dimethyl stearyl amine or mixtures thereof. Most proferably

N.N-dimethyl cleyl amine, N.N-dimethyl tallow emine, and

NN-dimethyl sola alkyl arrine are used.
 According to another embodiment of the present compositions, a typical specific class of arrines as defined hereimbefore, comprises:

N-oleyl-1.3-diaminopropane. N-stearyl-1.3-diaminopropane.

N-stearyi-1,3-diaminopropane, N-(hydrogenated)tallow-1,3-diaminopropane.

N-soja alkyl-1,3-diaminopropane, N-lauryl-1,3-diaminopropane, N-myrstyl-1,3-diaminopropane, N-cetyl-1,3-diaminopropane,

s N-oley(-1,4-diaminobutane, N-steary(-1,4-diaminobutane, N-frydrogenated)tallow-1,4-diaminobutane, N-soia alkvi-1,4-diaminobutane,

N-soja alkyl-1,4-diaminobutana N-lauryl-1,4-diaminobutane, an N-mydstyl-1,4-diaminobutane.

N-cetyl-1,4-diaminobutane, N-cleyl-1,5-diaminopentane, N-stearyl-1,5-diaminopentane

N-(hydrogenated)tallow-1,5-diaminopentane. IN-soia alkyl-1,5-diaminopentane.

N-Buryl-1.5-diaminopentane,
N-myristyl-1.5-diaminopentane, and
N-ostyl-1.5-diaminopentane or mixtures thereof.
A preferred group of the latter group comprises:

N-oleyi-1,3-diaminopropane. N-oleyi-1,4-diaminoputane, N-tailow-1,3-diaminopropane,

N-tallow-1,4-diaminobutane, N-stearyl-1,3-diaminopropane, and as N-stearyl-1,4-diaminobutane.

Most preferably N-oley(-1,3-diaminopropens, N-oley(-1,4-diaminopropens, and N-tallow-1,3-diaminopropens, and

 N-talkow-1,4-diaminobetrane are used.
 According to another embodiment of the present compositions, a typical specific class of aminos as defined hereithefore, comprises:

2-oley(-1-aminoethyl-4,5-dihydro imidazole, 2-stearyl-1-aminoethyl-4,5-dihydro imidazole, d 2-(hydrogenated)tallow-1-eminoethyl-4,5-dihydro imidazole,

2-soja alkyl-1-aminoethyl-4,5-dihydro imidazole, 2-louryl-1-aminoethyl-4,5-dihydro imidazole, 2-myristyl-1-aminoethyl-4,5-dihydro imidazole, 2-cotyl-1-aminoethyl-4,5-dihydro imidazole.

se 2-oleyi-1-amino-n-propyi-4,5-dihydro imidazole, 2-stearyi-1-amino-n-propyi-4,5-dihydro imidazole, 2-thydrogenated/tailow-1-amino-n-propyi-4,5-dihydro imidazole, 2-soio-etkyi-1-amino-n-propyi-4,5-dihydro imidazole,

2-lauryl-1-amino-n-propyl-4,5-dihydro imidazole, 2-lauryl-1-amino-n-propyl-4,5-dihydro imidazole, 2-cetyl-1-amino-n-propyl-4,5-dihydro imidazole, 2-cetyl-1-amino-n-propyl-4,5-dihydro imidazole,

2-oleyl-1-amino-n-butyl-4,5-dihydro imidazole, 2-stearyl-1-amino-n-butyl-4,5-dihydro imidazole,

2-(hydrogenated)tallow-1-amino-n-butyl-4,5-dihydro imidazole, 2-sola-alkvi-1-amino-n-butvi-4.5-dhvdro imidazole. 2-lauryl-1-amino-n-butyl-4,5-dihydro imidazole, 2-myristyl-1-amino-n-butyl-4,5-dlhydro imidazole, 5 2-cetyl-1-amino-n-butyl-4.5-dihydro imidazela. 2-clevi-1-hydroxyethyl-4.5-dihydro imidazole. 2-stearyl-1-hydroxyethyl-4,5-dihydro imidazole, 2-fhydrogenated/tallow-1-hydroxyethyl-4.5-dihydro imidsonle. 2-soja-alkyi-1-hydroxyethyi-4,5-dhydro imidazole to 2-lauryl-1-hydroxyethyl-4,5-dhydro imidazola. 2-myristyl-1-hydroxyethyl-4.5-dihydro imidazole. 2-cstyl-1-hydroxyethyl-4,5-dihydro imidazole, 2-plays 1-bydgovy-n-propys-4.5-dlbydgo (midazole

2-stearyl-1-hydroxy-n-propyl-4,5-dihydro Imidazole, rs 2-(hydrogenated)tallow-1-hydroxy-n-propyl-4,5-dihydro imidazole. 2-spis-skyl-1-hydroxy-n-orgayl-4.5-dihydm imidazole.

2-lauryl-1-hydroxy-n-propyl-4.5-dihydro imidazole. 2-myristyl-1-hydroxy-n-propyl-4.5-dlhydro imidazole, 2-cetyl-1-hydroxy-n-propyl-4,5-dlhydro imidazole,

2-clevi-1-hydroxy-n-butyl-4.5-dihydro Imidaznia. 2-stearyl-1-hydroxy-n-butyl-4,5-diffydro Imidazole. 2-(hydrogenated)tallow-1-hydroxy-n-butyl-4,5-dihydro imidszole, 2-sola-alievi-1-hydroxy-n-butyl-4.5-dihydro imidazola. 2-lauryl-1-hydroxy-n-butyl-4,5-dilhydro imidazole,

as 2-myristyl-1-hydroxy-n-butyl-4,5-dihydro imidazole, and 2-cetyl-1-hydroxy-n-butyl-4.5-dihydro imidezole or mixtures thereof.

A preferred group of the latter class comprises: 2-plays 1-amignethyl-4 5-dibydro imidazole 2-tallow-1-aminosthyl-4.5-dihydro imidazole.

se 2-soja alkyi-1-aminoethyi-4,5-dihydro imidazole. 2-oleyi-1-hydroxyethyl-4,5-dihydro imidazola. 2-sola afkvl-1-hydroxyethyl-4.5-dihydro imidazole, and 2-tailow-1-hydroxyethyl-4,5-dihydro imidazole.

Most preferably 2-olevi-1-aminoethyl-4,5-dihydro imidazole. 2-olayl-1-hydroxyathyi-4,5-dihydro imidazole, 2-tallow-1-aminoethyl-4.5-dihydro imidazole, and

2-tallow-1-hydroxyethyl-4,5-dihydro imidazole are used. The amines are more proferably used in amounts from 1 to 5% by weight based on the total weight of 40 the composition, depending on the specific type of the agent and desired final viscosity,

Preferred embodiments of the present compositions are formed by those containing one or more salts of the sulphonates, specified under (c). Typical salts of the sulphonates, specified under (c) are the sodium. potassium, ammonium, and lower amine salts, of which the sodium salts are preferred. The sodium salt of xylene sulphonate is more preferred. The sulphonates are preferably used in amounts from 1 to 5% by is weight, based on the total weight of the composition.

The composition according to the present invention exhibit a viscosity of at least 200 mPa.s at 20°C. For compositions exhibiting optimum thickening effects, the ratio of the weights of, e.g., the arrive and the sulphonete is in the range from 0.1-6 and preferably from 1.5-3 and more preferably around about 2.5. A more preferred embodiment of the thickened cleaning compositions of the present invention is

a) 10% by weight of formic acid or citric acid, b) 2% by weight of N.N-dimethyl cleyl amine or bis(2-hydroxyethyl)cleyl amine or N-oteyl-1,3-

so formed by a thickened cleaning composition which comprises: diaminopropare, c) 2% by weight of sodium xylene sulphonate (40%),

d) 0,2% by weight of methylsalicylate as perfume, and e) water to 100%, showing a viscosity, measured by means of a Brookfield LVT, 60 rpm at 20°C, of 550-1000 mPa.s.

It will be appreciated that another aspect of the invention is formed by a premix compositions for the a

preparation of the atore-described thickened aqueous compositions by dilution with water, optimally, containing other desired ingredients, which comprise at least:
it as a mine as societified free/interfore under (b):

ii) an organic anionic sulphonate as specified hereinbefore under (c).

It will be appreciated that the flickmend assesses compositions according to the present invention may be prepared by dilution of such a premix composition with water, containing the desired amount of weak acid and of other desired minor ingredients. According to an alternative embodiment of the preparation of the finally used thickmend squeeces compositions, the weak and independently may be added to the premix better or that the addition of water.

10 The tickening systems deteribed above display a viscoally temperature relationship that has a purabolic profile with the maximum intensity being outside at a temperature in the range from 10 50°C. An increase in chain feegit of the higher abyl chain, in the unities will in general cause the respensive at which this peak cours be higher, whereas a shoutcom of the regions area of the study chain, causes the temperature at which the maximum viscosity is produced by it the visit the below.

It will be appreciated by persons sidiled in the art that an ideal situation, wherein the velocity of the proposition should be independent of the temperature over a temperature surge which encompasses the practical domestic use conditions, i.e., from 5*-25*°C, is appreciated most closely by the compositions of the present invention, employing a blend of specific amines and specific sulphonates, the application of owhich would orthink be reliefed by persons stilled in the art.

It will be appreciated by persons stilled in the set that the optimum characteristics of the compositions of the present invention will be powered by the specific kind of serine, kind of subphorate, kind of add in the composition, amount of acid skitchlyte concentration in total composition, ratio of weights of the amine-authorates combination and counter into if the subphorates combined and controlled in an acid process of the subphorates.

Another feature of the present invention is formed by the application of the thickened aqueous single phase compositions according to the usual methods of this specific art of cleaning non-horizontal surfaces such as walls windows and spatishry fifting.

The invention is illustrated by the following examples without restricting the scope of these embodiments.

Example 1

- 30

Preparation of thickened cleaning composition comprising formic acid, sodium xylene sulphonate, and 25 N,N-dimethyl cleyl amine.

Form: act (10 g) was dissolved in about 88 ml of deminerationd water with string at 20°C, whereafter 2 g of NN-dimethytologis after 6/menon fMDO(9) was added, followed by the addition, with contradisting, of 2 g of sodium rylene suiphonate (40%, i.e. added in the form of a 40% by weight solution). During the addition of the suiphonate the viscously immediately increased and was finally 800 mPax.

During the addition of the supprovale me viscosity intredsteely increased end was finally 990 minutes, or measured by means of a Bockfield LVT, 50 ppm, viscosimeter. The solution obtained was perfectly clear and stable at elevated temperature (40°C).

Example

By a method similar to Esample 1, an approximation was propried from 16 g of formic acid in 8th mil of demineralized water, 2 g of NN-dimetry) dely ames, 1,75 g of sodium cylene sulphostae (40%) and 0.25 g of methy satisystae as perfure. During the addition of the sulphostae the viscosity immediately (missed and wate finally 550 mFlax, measured by means of a Brookled LVT, 00° pm, viscosimeter. The solution obtained was perfectly dear and stable at electrical temperature (10° CO).

Example 3

By a method similar to Example 1, an expansis composition was prepared from 10 g of formic add in Birl of demineratizand water. 2 g of bet2P-typosynthylicityl anima and 2 g of south mylone subfaction to (40%). The solution had a viscosity of 980 mPa.s. measured by means of Brookfield LVT 60 rpm. viscosimetra of 20°C. The solution behalved was orefetcly clear and stable at elevation temperature (40°C).

Example 4

By a method similar to Example 1, an aqueous composition was prepared from 5g of hydrated citric in 52 net of deministratized water. 15g of bisity-doxyedy-jobely arrite and 15g of sodium system pulphonate (60%). The solidion had a viscosity of 50 mPas measured by means of a Brockleds UVT. 60mm, viscosimeter at 20°C. The solution obtained was perfectly clear and stable at elevated terrenture (40°C).

no Example 5

By a method smiller to Example 1, an acutous composition was prepared from 5g of hydrated cities odd in 32-m1 of centimentative sharts, 1g of Neiligel-1-3-deminingopreas and 2g of sodium sydenostical principles (40°1). The solution had a viscosity of 200 mPax measured by means of a Brookfeld LVT, 80 rpm, viscosimeter 20°C. The solution obtained was practically less resistable self-versible temperature (40°C).

Example 6

By a method similar to Example 1, an aqueous composition was prepared from 5 g of hydrated citric acid in 91.5 ml of dominoralized water, 20 g of NV-dismostyl cleyl amins, 1.5 g of sodium sylves supplinates (40%). The solution had a viscosity of 980 mPas at 20°C, measured by means of a Brooticitic LVT, 80 rpm, viscosimeter. The solution obtained was perfectly clear and stable at elevated temperature (40°C).

Example 7

By a method similar to Example 1, an equivour composition was propored from 10 g forms acid in 86 and rold designerstand extent 1,5 g of this salky simine (Amende 20) and 2,5 g of acid communications (Africa), The solution obtained with the control of the contr

as Example B

By a method similar to in Example 1, as aquebous composition was prepared from 5 g oil facts acid in 92,7 mil of comingratured whent, 1 g of bids/phidpose/byllogley paines, 2.3 g of social mylenes/paines/ (40%). The solution had a viscosity of 310 mPa.s at 20°C, measured by means of a Brooklind LVT, 80 rpm of viscosiments. The solution obligation was prefetch object and statistics at elevated temporature (40°C).

Example 9

ii By a method similar to Example 1, an acquisous composition was prepared from 5 g of trafatic acid in 92,8 ml of demineralized water, 1 g of blat2-hydroxysthytologyl amine and 1.2 g of sodium xylene sulphonate (40%). The solution has a viscostly of 250 mPax at 20°C, measured by means of a Brockfilled LVT, 00 rpm viscosimeter. The solution obtained was perfectly clear and stable at elevated temperature (40°C).

Example 10

By a method similar to Example 1, an aqueous composition was prepared from 10 g of acetic acid in 88,8 ml ml of demineralized water, 1,5 g of bisit-hydrosystylpoleyl unine end 1,7 g of souther system sulphonate (40%). The solition had a viscosty of 300 mPas at 30°C, measured by means of a Societic LVC, 60 rpm viscosimatar. The solution obtained was perfectly clear and stable at elevated temperature

Example 11

By a method similar to Example 1, an aqueous composition was prepared from 10 g formic acid in 83 mp of demineratized water, 2 g of belg/decorphityleight similes, 0.1 g methys satisfyste and 25 pp potassium-parationae sulphonate (40%). The acidion had a shooting of 350 mP.s.s at 20°C measured by means of a Brookfield UT/T, 60 pm viscosimeter. The solution obtained was perfectly clear and stable at elevated tomercurum (40°C).

ro Claims

1. Thickened aqueous compositions, comprising

a)0,1-50% by weight of a weak sold, having a pK value > 2,0 and

- a)0,1-50% by weight of an amine, more particularly selected from primary, secondary or
- 15 terflary lentine or dismines, carryling set least one nitrogen fished hydrocarbon group, which represents a securated or unsaturated linear or branched alkyl group having at least 10 carbon atoms and preferably 18-24 carbon atoms, or an eyk, satisfy or slaryl group containing up to 24 carbon atoms, and wherein the
- optional other richogen Relaid groups are formed by optionally selectable, daired groups, and provided produced and produced produced and produced produced
- c) from 0.01% to 5% by weight of an organic, anionic sulphonate selected from the group consisting of current sulphonate, xylene sulphonate, and toluene sulphonate, in their acid or salt form, and mixtures thereof.
- d) water, wherein optionally one or more additional cleaning, disinfecting and/or odorizing agents may be dissolved in minor amounts, the percentages by weight being calculate on the weight of the total acrossos composition.
- Thickened aqueous compositions according to claim 1, characterized that they have a pH of from 0.5-4.
- Thickened equeous compositions according to claim 1 or 2, characterized in that they contain 1-10% by weight of the amine.
- 4. Thickened acueous compositions according to any one of the preceding claims, characterized in that an action of any value of from professity 3,05,00 used.
 5. Thickened acueous compositions according to any one of the preceding claims, characterized in that they contain 1-10% by weight of an acts selected from the group constraint of forms could, cidit acted.
- tarteric acid, succinic acid, adipic acid, acetic acid, phosphoric acid, sulphamic acid, glutanc acid and tactic acid.

 5. Thickened aqueous compositions according to any one the preceding claims, characterized in that
- they contain formic scid or citric acid.

 7. Thickened agueous compositions according to any one of the preceding claims, characterized in that hey contain panies according to the formulae:



- wherein R, represents a saturated or unsaturated fineer or branched alkyl group having at lesst 10 cerbon atoms and preferably 18-24 carbon atoms, or an anyl, analkyl or alkaryl group containing up to 24 carbon atoms.
- 55 *** Therefor R, and R, may be the same or officered and represent hydrogen, an alkey group, and preferably a lover skilly group containing 14 actions atoms and more preferably a methyl group or polyjsfamory), preferably a polyjeriony) or polyjsfamory group, wherein more preferably the number of ethory or propoxy particularly as a most 5. or

$$R_2$$
 $N = (Ot_2)_n = N$
 R_3

wherein R, is as defined before and R_e, R₁ and R_e may be the same or different and represent hydrogen, aRyl, poly(ethoxy) or poly(propoxy) groups, and n is a number from 1 to 8 and more pretgrably 2-4, or

wherein R, is a hydroxyalkyl or amino alkyl group containing 1-4 carbon atoms, preferably reacted with shurated or unsaturated fasty acid with 8-20 carbon atoms and R, is an alkyl or alkenyl group, finear or branched, with 8-20 carbon atoms.

Thickened aqueous composition according to any one of the preceding claims, characterized in that
they contain an amine selected from the group consisting of:

bis(2-hydroxyethyf)tallow amine, bis(2-hydroxyethyf)hydrogenated tallow amine.

bis(2-hydroxyethyl)soja alkyl amine,

bits[2-hydroxyethyl]cetyl amine,

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bis(2-hydroxyethyl)oleyl amine.

bls(2-hydroxypropyl)tallow amine, bis(2-hydroxypropyl)hydrogenated tallow amine.

bis(2-hydroxypropy)hydrogenated tailor bis(2-hydroxypropyl)so(a alkyl amine,

bis(2-hydroxypropyl)cetyl amine,

bist2-hydroxypropylloley/ amine.

bis(2-hyroxyethyl othoxy)tallow amine.

bis(2-hydroxyethyl ethoxylhydrogenated tellow amine, 36 bis(2-hydroxyethyl ethoxylsoja alkyl amine,

bis(2-hydroxyethyl ethoxy)cetyl amine,

bis(2-hydroxyethyl ethoxy)cleyl amine,

bis(2-hyroxyethyl propoxy)tallow amine, bis(2-hydroxyethyl propoxy)tydrogenated tallow amine,

40 bis(2-hydroxyethyl propoxy)soja alkyl amine,

bis(2-hydroxyethyl propoxy)cetyl amine, and

bis[2-hydroxyethyl propoxyloleyl amine or mistures thereof.

9. Thickened acuseus compositions according to claim 8. Characterized in that they contain an amine

selected from the group consisting of: bis(2-hydroxyethylicley) amine.

bis(2-hydroxyethyfjoleyl amine,

bis(2-hydroxyethyl)tallow amine, and

bis(2-hydroxyethylitallow amino

10. Thickened aqueous compositions according to any one of the claims 1 through 7, characterized in 60. that they contain an amine selected from the group consisting of:

N.N-dimethyl cleyl amine. N.N-dimethyl lauryl amine.

N,N-dimethyl lauryl amine, N,N-dimethyl cetyl amine,

N.N-dimethyl mynstyl amine.

cc N.N-dimethyl soil alkyl amine.

N,N-dimethyl tallow amine, and

N,N-dimethyl stearyl amine and mixtures thereof.

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- 11. Thickened aqueous compositions according to claim 10, characterized in that they contain an amine selected from the group consisting of: N,N-dimethyl oleyl amine.
- N.N-dimethyl tallow amine, and
- s N.N-camethyl soia alkyl amine.
- 12. Thickened aqueous compositions according to any one of the claims 1 through 7, characterized in
 - that they contain an amine selected from the group consisting of N-clevi-1.3-diaminopropane.
- N-gleyl-1,4-diaminobutane.
- to N-taffow-1,3-diaminopropane.
- N-tailow-1.4-diaminopropane.
- N-stearyl-1.3-diaminopropane, and
- Nisteanyl-1 4-diaminohutane and mixtures thereof.
- 13. Thickened aqueous compositions according to claim \$2, characterized in that they contain an amine
 - is selected from the group consisting of: Nucleyl-1.3-dlaminocropate.
 - N-cleyl-1,4-diaminobutane

 - N-tellow-1.3-diaminopropane, and N-tatiow-1 4-diaminobutane.
 - 14. Thickened aqueous compositions according to any one of the claims 1 through 7, characterized in that they contain an amine selected from the group consisting of
 - 2-olevi-1-aminoethyl-4,5-dihydro imidazole,
 - 2-tallow-1-aminoethyl-4.5-dihydro imidazola
 - 2-soia alkvi-1-aminoethvi-4,5-dihvdro imidazole. as 2-oleyi-1-hydroxyethyi-4,5-dihydroimidazole,
 - 2-soja alkvi-1-hydroxyathyi-4.5-dihydro imidazola, and
 - 2-tallow-1-hydroxyethyl-4.5-ditrydro imidazole and mixtures thereof.
 - 15. Thickened aqueous compositions according to claim 14, characterized in that they contain an emire selected from the group consisting of:
 - xo 2-olevi-1-sminoethyl-4,5-dihydro imidazole.
 - 2-clayl-1-hydroxyethyl-4,5-dihydro imidazole.
 - 2-tellow-1-aminoethyl-4,5-dhydro imidazole, and 2-tallow-1-hydroxyethyl-4,5-dihydro imidazola.
 - 16. Thickened aqueous compositions according to any one of the claims 1 through 7, characterized in as that they contain an amine selected from the group consisting of oleyiamine,
 - tation amine. hydrocenated tallow amire.
 - soja alkyl amine.
 - ed cetyl amine
 - stoaryl artine lauryl amine, and
 - myristyl amine and mixtures thereof.
 - 17. Thickened compositions according to any one of the claims 1 through 7, characterized in that they
 - es contain an amine in an amount of from 1 to 5% by weight based on the total weight of the composition 18. Thickened compositions according to any one of the claims 1 through 7, characterized in that they
 - contain on suiphonate in an amount of from 1 to 5% by weight based on the total weight of the composition. 19. Thickened compositions according to any one of the claims 1 through 7, characterized in that they contain the sodium salt of xylene sulphonate.
 - 20. Thickened compositions according to any one of the clams 1 through 7, characterized in that they contain an acid in an amount from 1-15% by weight, based on the weight of the total composition.
 - 21. Premix compositions for the pregaration of the thickened aqueous compositions according to any one of the claims 1 through 20 by dilution with water, optionally containing other desired ingredients, characterized in that they contain at least.
 - it an amine, selected from orimery, secondary or terdary emines or diamines, cerrying at least one nitrogen linked hydrocarbon group which represents a saturated or unsaturated linear or branched alkyl group having at least 10 carbon atoms and preferably 16-24 carbon atoms or an aryl, aralkyl or alkaryl containing up to 24 carbon atoms, and wherein the optional other nitrogen linked groups are formed by

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optionally substituted slayl groups, any groups or assign groups or polyationary groups, prelivability polyationary or polypropage, containing at most 5 stitusey groups and more pertensibly 1-3, or wherein the strains is in the form of a behaviorydic ring, containing at least two introgen atoms, one of which being substituted by serincip themes alled or hydrony (lowes) allow, preferrably reacted with fasty sactor, while the ring is luturate bearing a linear or branched skilly or allegen groups being at least 10 carbon atoms.

- is turner bearing a linear or branched sakyl or awardy group naving at least 10 carbon atoms;

 (ii) an organic, anionic sulphorists selected from the group consisting of curnens sulphonate, xylone sulphonate, in their acid or salt form, and mixtures thereof.
- suiphonate, and tolusine sulphonate, in their acid or salt form, and mixtures thereof.

 22. Premix compositions according to cistim 21, characterized in that the ratio of the weights of the amine to the sulphonate is in the range from 1,5-3 and more preferably around 2.5.
- 23. Premix compositions according to claim 21, characterized in that an amine is used selected according to any one of the preceding claims 8 through 16.
 - 24. Premix compositions, according to claim 23, characterized in that an amine is used selected according to any one of the preceding claims 9, 11, 13, 15 and 16.

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25. Process for cleaning non-horizontal surfaces such as wills, windows and sanitary fittings by the spiceation of the thickened supposus single phase cleaning compositions according to any one of the proceding claims 1 through 20 by methods usual in the art.